Listing of the Claims:

1. (Original) An image processing device for removing fixed pattern noise in images captured by an image pickup device mounted on a vehicle, comprising:

(a) memory on which is stored a plurality of images captured by the image pickup device while the vehicle is running; and

(b) a controller operatively coupled to the memory and adapted to generate correction data by extracting high spatial frequency components from portions of the stored images, and to use the correction data to remove fixed pattern noise from images captured by the image pickup device.

2. (Original) The image processing device of Claim 1, wherein the controller is further adapted to use a high pass spatial frequency filter to extract the high spatial frequency components.

3. (Original) The image processing device of Claim 1, wherein the controller is further adapted to use a low pass spatial frequency filter to extract the high spatial frequency components.

4. (Original) The image processing device of Claim 1, further comprising:

a sensor adapted to be mounted to the vehicle and to output a behavior signal indicating whether the vehicle is undergoing a detected type of movement;

wherein the controller is further adapted to store in memory the images captured by the image pickup device in response to the behavior signal indicating that the vehicle is undergoing the detected type of movement.

5. (Currently amended) The image processing device of Claim 4, wherein the detected type of movement is a yaw movement that is sufficient to blur the images captured by the image pickup device, and wherein the controller is further adapted to extract the correction

data from horizontally-oriented portions of the images.

6. (Currently amended) The image processing device of Claim 4, wherein the detected type of movement is a pitch movement that is sufficient to blur the images captured by the image pickup device, and wherein the controller is further adapted to extract the correction data from vertically-oriented portions of the images.

7. (Original) The image processing device of Claim 4, wherein the controller is further adapted to store the images in the memory during a time period that varies with the rate of the detected type of movement.

8. (Original) The image processing device of Claim 7, wherein the controller is further adapted to store the images in memory during a time period that varies inversely with the rate of the detected type of movement.

9. (Withdrawn) The image processing device of Claim 1, further comprising:

a wiper area extractor adapted to extract, from the images captured by the image pickup device, a plurality of areas that correspond to windshield wipers;

wherein the controller is further adapted to superimpose the plurality of extracted windshield wipers areas to form one or more of the stored image portions from which correction data is extracted.

10. (Withdrawn) The image processing device of Claim 9, wherein the wiper extractor is adapted to calculate speed of objects in the images captured by the image pickup device, and to extract as the windshield wiper areas the objects in the images having a speed above a prescribed value.

11. (Withdrawn-currently amended) The image processing device of Claim 1

wherein the processor is further adapted to extract a high spatial frequency component for which ~~the~~ a luminance output value is highest in the stored images and a high spatial frequency component for which ~~the~~ a luminance output value is lowest in the stored images, and to adjust the gain and offset of the images captured by the image pickup means based on the ~~extracted~~ high spatial frequency component at high luminance and the high spatial frequency component at low luminance.

12. (Currently amended) An image processing device for removing fixed pattern noise from images captured by an image pickup device mounted on a vehicle, comprising:

(a) storage means for storing a plurality of images captured with the image pickup means;

(b) extracting means for extracting ~~the~~ a high spatial frequency component contained in the images in the storage means and for generating correction data for removing the fixed pattern noise based on the high spatial frequency component; and

(c) image correcting means for removing fixed pattern noise from the images captured with the image pickup means based on the correction data.

13. (Original) The image processing device of Claim 12, wherein the storage means stores images captured by the image pickup device while the vehicle is traveling.

14. (Currently amended) The image processing device of Claim 12, further comprising:

~~(a)~~ (d) behavior detecting means for detecting ~~the~~ behavior of the vehicle;

~~(b)~~ (e) storage time setting means for determining a time period during which images captured by the image pickup means will be stored in the storage means based on the behavior of the vehicle detected by the behavior detecting means; and

wherein the storage means stores the images captured by the image pickup means

for the duration of the storage time set by the storage time setting means.

15. (Withdrawn-currently amended) The image processing device of Claim 12, further comprising:

wiper area extraction means for extracting ~~the~~ areas in which a wiper is present from the images captured by the image pickup means; wherein the storage means stores a plurality of wiper areas that have been extracted from the images by the wiper area extraction means.

16. (Withdrawn-currently amended) The image processing device of Claim 15, wherein the wiper area extraction means further comprises:

speed calculation means for processing the images captured by the image pickup means to calculate speed information for the images; wherein ~~the~~ each area on the images for which speed above a prescribed value is calculated is extracted as one of the plurality of wiper ~~area~~ areas based on the image speed information calculated by the speed calculation means.

17. (Withdrawn-currently amended) The image processing device of Claim 12, further comprising:

a gain offset means for extracting the high spatial frequency component for which ~~the~~ a luminance output value is highest in the stored images and a high spatial frequency component for which the luminance output value is lowest in the stored images, and for correcting ~~the~~ gain and offset of the images captured by the image pickup means based on the ~~extracted~~ high spatial frequency component at high luminance and the high spatial frequency component at low luminance to improve the uniformity of the images.

18. (Currently amended) A vehicle having an image processing device for removing fixed pattern noise in images, comprising:

(a) a vehicle having a camera mounted thereto, the camera including an

image-pickup element generating as output a plurality of images, each image of the plurality of images having a luminance output value for a plurality of portions of that image;

(b) memory on which is stored the plurality of images generated by the image pickup element while the vehicle is running; and

(c) a controller operatively coupled to the memory and adapted to generate correction data by extracting high spatial frequency components from the luminance output values of the portions of the stored images, and to use the correction data to remove fixed pattern noise from images captured by the image pickup element by computing a difference between the stored images and the correction data.

19. (Original) The vehicle of Claim 18, further comprising:

a sensor mounted to the vehicle and adapted to output a behavior signal indicating whether the vehicle is undergoing a detected type of movement;

wherein the controller is further adapted to store in memory the images captured by the image pickup element in response to the behavior signal indicating that the vehicle is undergoing the detected type of movement.

20. (Currently amended) The vehicle of Claim 19, wherein the detected type of movement is a yaw movement that is sufficient to blur the images generated by the image pickup element, and wherein the controller is further adapted to extract the high spatial frequency components from horizontally-oriented portions of the images.

21. (Currently amended) The vehicle of Claim 19, wherein the detected type of movement is a pitch movement that is sufficient to blur the images generated by the image pickup element, and wherein the controller is further adapted to extract the high spatial frequency components from vertically-oriented portions of the images.

22. (Currently amended) The vehicle of Claim 19, wherein the controller is

further adapted to store the images in the memory during a time period that varies with ~~the~~ a rate of the detected type of movement.

23. (Withdrawn-currently amended) The vehicle of Claim 18, further comprising:

windshield wipers and a wiper controller adapted to generate a wiper activation signal when the windshield wipers are operational;

wherein the controller is responsive to the wiper activation signal and is further adapted to extract areas of the images that correspond to the windshield wipers, and to superimpose the extracted windshield wiper areas in the memory to form one or more of the stored image portions from which the controller extracts the high spatial frequency components.

24. (Withdrawn-currently amended) The vehicle of Claim 23 wherein the controller is further adapted to calculate speed of objects in the images and to extract as the windshield wiper areas ~~the~~ areas on the images having a speed above a prescribed value.

25. (Withdrawn-currently amended) The vehicle of Claim 18 wherein the processor is further adapted to extract a high spatial frequency component for which the luminance output value is highest in the stored images and a high spatial frequency component for which the luminance output value is lowest in the stored images, and to correct ~~the~~ gain and offset of the images captured by the image pickup means based on the ~~extracted~~ high spatial frequency component at high luminance and the high spatial frequency component at low luminance.

26. (Currently amended) An image processing system for removing fixed pattern noise in images, comprising:

(a) a camera including an image pickup element generating as output a plurality of images;

(b) memory on which is stored the plurality of images generated by the image pickup element; ~~and~~

(c) a controller operatively coupled to the memory and adapted to generate correction data by extracting high spatial frequency components from portions of the stored images, and to use the correction data to remove fixed pattern noise from images captured by the image pickup element; and

(d) a sensor adapted to output a behavior signal indicating that the camera is undergoing a detected type of movement, wherein the controller is further adapted to store in memory the images captured by the image pickup element in response to the behavior signal indicating the detected type of movement.

27. (Canceled).

28. (Currently amended) The image processing system of Claim [[27]] 26, wherein the detected type of movement is a yaw movement that is sufficient to blur the images captured by the image pickup element, and wherein the controller is further adapted to extract the high spatial frequency components from horizontally-oriented portions of the images.

29. (Currently amended) The image processing system of Claim [[27]] 26, wherein the detected type of movement is a pitch movement that is sufficient to blur the images captured by the image pickup element, and wherein the controller is further adapted to extract the high spatial frequency components from vertically-oriented portions of the images.

30. (Currently amended) The image processing system of Claim [[27]] 26, wherein the behavior signal indicates ~~the~~ a rate of the detected type of movement, and the controller is further adapted to store the images in the memory during a time period that varies with the rate of the detected type of movement.

31. (Withdrawn-currently amended) The image processing system of Claim 26, wherein the controller is further adapted to extract areas of the images that correspond to windshield wipers, and to superimpose the extracted windshield wiper areas in the memory to form at least one of stored image portions from which the controller extracts the high spatial frequency components.

32. (Withdrawn) The image processing system of Claim 31, wherein the controller is further adapted to calculate speed of objects in the images generated by the image pickup element, and to extract as the windshield wiper areas the areas on the images having a speed above a prescribed value.

33. (Withdrawn-currently amended) The image processing system of Claim 26, wherein the processor is further adapted to extract a high spatial frequency component for which the luminance output value is highest in the stored images and a high spatial frequency component for which the luminance output value is lowest in the stored images, and to correct ~~the~~ gain and offset of the images captured by the image pickup means based on the ~~extracted~~ high spatial frequency component at high luminance and the high spatial frequency component at low luminance.

34. (Currently amended) ~~A~~ An image processing method for removing fixed pattern noise from images captured by an image pickup device mounted on a vehicle, comprising:

(a) storing a plurality of images captured with the image pickup means;

(b) extracting ~~the~~ a high spatial frequency component contained in the images;

(c) generating correction data for removing the fixed pattern noise based on the high spatial frequency component; and

(d) using the correction data to remove fixed pattern noise from the images captured by the image pickup.

35. (Original) The image processing method of claim 34, wherein storing the plurality of images takes place while the vehicle is moving.

36. (Original) The image processing method of claim 34, further comprising:

detecting the behavior of the vehicle;

based on the behavior of the vehicle, determining a time period during which images captured by the image pickup means will be stored; and

storing the plurality images during the time period.

37. (Withdrawn-currently amended) The image processing method of claim 34, further comprising:

extracting ~~the~~ each area in which a wiper is present from images captured by the image pickup device;

superimposing the wiper areas to define an image having at least one portion that is black; and

extracting a high spatial frequency component contained in the black portion.

38. (Withdrawn-currently amended) The image processing method of claim 37, further comprising:

processing the images captured by the image pickup means to calculate speed information for the images; and

extracting as the wiper areas ~~the~~ portions of the images for which speed above a prescribed value is calculated.

39. (Withdrawn-currently amended) The image processing method of Claim 34, further comprising:

extracting a high spatial frequency component for which the luminance output

value is highest in the stored images and a high spatial frequency component for which the luminance output value is lowest in the stored images, and improving the uniformity of the images by correcting ~~the~~ gain and offset of the images based on the ~~extracted~~ high spatial frequency component at high luminance and the high spatial frequency component at low luminance.

40. (New) The image processing device of claim 1, wherein each image of the plurality of images includes a luminance output value for a plurality of portions of that image; and wherein the controller is configured to generate the correction data by extracting the high spatial frequency components from the luminance output values of the stored images and to use the correction data to remove fixed pattern noise from the images by computing a difference between the stored images and the correction data.